

# FURTHER VICTORIAN OPISTHOBRANCHIA

By ROBERT BURN\*

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(Plates 6-7; Text figures 1-9)

## INTRODUCTION

This is the third paper of a series to be published concerning Victorian Opisthobranchia. The first two appeared in the latter half of 1957 and dealt with 36 species, a number of which were described as new. This paper deals with 15 species, of which 12 are new records for this State; one new genus is proposed for the reception of a quite common species, and 9 species are described for the first time. This brings the list of Victorian Opisthobranchia to 48 species divided among 32 genera.

The localities from which all species have been collected are in the recently proposed Victorian Maugean Region, but within the Peronian influence. This has apparently been the reason why a number of species described from Sydney Harbour, New South Wales, by Angas (1864) are quite common here. But some of these species of Angas' are rare in their type locality and have been seen only once or twice over the intervening years since description. These species, i.e., *Praeglisicita chrysoderma* (Angas), *Madrella sanguinea* (Angas), *Melibe australis* (Angas) and *Paliolla cooki* (Angas) are rather common at most localities at which collecting has been undertaken by this author.

Could it be that the Peronian Region is somewhat influenced by this Victorian Maugean Region, and was it at one of these times that Angas collected his species?

Two species recorded here were first described from European waters, one of which is also recorded from Japan. The other is quite remarkable for its most peculiar rhinophoral construction. The species of *Elysia* here described as new is the third of its genus from Australia—surely this genus must occur in a number of species along our northern and western coast-lines in tropical waters? As it is, the three species known all occur on our east or south-east coast.

Unless otherwise stated, all specimens of species described or recorded here were collected by the author.

The type specimen of each new species, along with specimens of other newly recorded species, are to be presented to the National Museum of Victoria, Melbourne.

The systematic position of the species dealt with in this paper can be set out as follows:—

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\* Geelong, Victoria, Australia.

(\* Denotes species not previously recorded from Victoria.)

- Class - - - GASTROPODA  
Subclass - - OPISTHOBRANCHIA  
Order - - - Anaspidea  
Family - - - **APLYSIIDAE**  
\**Aplysia hyalina* Sowerby  
Order - - - Sacoglossa  
Suborder - - Elysiacea  
Family - - - **ELYSIIDAE**  
\**Elysia furvacauda* sp. nov.  
Order - - - Notaspidea  
Suborder - - Pleurobranchacea  
Family - - - **PLEUROBRANCHIDAE**  
*Pleurobranchaea maculatus* (Quoy and Gaimard)  
Order - - - Nudibranchia  
Suborder - - Doridacea  
Superfamily - Eudoridacea  
Group - - - Phanerobranchia  
Family - - - **POLYCERIDAE**  
\**Patio parvula* sp. nov.  
*Paliolla cooki* (Angas) gen. nov.  
\**Kaloplocamus ramosus* (Cantraine)  
Family - - - **ACANTHODORIDIDAE**  
\**Lamellidoris maugeansis* sp. nov.  
Family - - - **OKENIIDAE** (= Goniodorididae)  
\**Goniodoris meraculus* sp. nov.  
Group - - - Cryptobranchia  
Family - - - **DORIDIDAE**  
\**Hallaxa indecora* (Bergh)  
\**Rostanga hartleyi* sp. nov.  
*Alloiodoris nivosus* sp. nov.  
*Platydoris galbanus* sp. nov.  
Suborder - - Arminacea  
Superfamily - \_\_\_\_\_  
Family - - - \_\_\_\_\_  
\**Janolus hyalina* (Alder and Hancock)  
\**Proctonotus? affinis* sp. nov.  
Suborder - - Dendronotacea  
Family - - - **DOTONIDAE**  
\**Doto ostentus* sp. nov.

## DESCRIPTIONS OF SPECIES

### *APLYSIA HYALINA* Sowerby

(Text fig. 1)

*Aplysia hyalina* Sowerby 1869, *Conchyl. Icon.*, 17, pl. 4, sp. 13.

Body large, upwards of 200 mm.; parapodia large, separated behind. Mantle aperture closed with a strong papilla on the spot of the closure. Rhinophores and cephalic tentacles large, stout, and crenulate on the distal ends. With a large, strong purple gland. Radula formula 50 x 23.1.23. Median tooth small, cusp rounded, with one large denticle either side;

laterals large, triangular, with one large denticle either side and three smaller ones on the inner edge. Body-colour dark purple-brown, with a few faint interlacing black lines on the outer surfaces of the parapodia and neck. The shell is large, 50 mm. long by 42 mm. broad, nearly flat, extremely thin and membranous; pale greenish-yellow in colour.



Text Fig. 1.  
*Aplysia hyalina* Sowerby.  
Single row of radula; a—central  
tooth, b—typical lateral tooth.

*Localities:* Rosebud (2 spec., May, 1954); Swan Bay (2 spec., April, 1955).

*Station:* Common, crawling on sand and weed in a few feet of water, low tide.

*Remarks:* This is the species referred to by the author (1957) as *A. tigrina* Rang = *A. sowerbyi* Pilsbry. Since then, however, a comparison of New South Wales and Victorian specimens have shown that the above is the correct name.

#### *ELYSIA FURVACAUDA* sp. nov.

(Pl. I, fig. I)

*Typical Elysia.* Body limaciform, up to 19 mm. in length; parapodia narrow, extending along either side of body for more than three-quarters of total length. When closed together, the parapodia form two distinct holes along the mid-dorsal line; the anterior hole is nearly the width of the body in diameter, while the other is much smaller; rhinophores large, auriculate slightly involute. Anus emerges a little to the right of the median-line on the anterior edge of the pericardium, which is medianly placed just behind the anterior edges of the parapodia. Body colouring is dark red-brown, outer sides of parapodia speckled with numerous small pale blue spots. The parapodia margins, when together, form a blue mid-dorsal line outlined on either side by a line of interrupted white. Margins of holes plain white; upper anterior portion of each parapodia greyish-blue. Slender neck, pale pinkish-brown; base of the rhinophores and the neck spotted with white dots. Rhinophores and tail tipped with black.

*Locality:* Torquay (1 spec., Sept., 1957).

*Station:* Unique, under stone at mid-tide.

*Remarks:* While under observation this specimen showed certain colour changes over a period of 24 hours. The colours noted above were those when first collected. After 24 hours the body-colour was dull brown, with many more larger blue spots on the sides than previously; the anterior blue patch had become very intense. Unfortunately, after two days the specimen died, and when placed in spirits became pale pink, still with black tips, but with no trace of blue.

*E. australis* Quoy and Gaimard and *E. marginata* (Pease), from New South Wales, are both predominantly green in body-colour, which at once separates the present species from them.

PLEUROBRANCHIAEA MACULATUS (Quoy and Gaimard)

*Pleurobranchidium maculatus* Quoy and Gaimard, 1832, Voy. "Astrolabe." Zool 2, p. 301, pl. 22, fig. 11-12.

= *Pleurobranchaea novaezealandiae* Cheeseman, 1878, Proc. Zool. Soc., Lond., p. 276, pl. 15, fig. 3.

= *Pleurobranchaea dorsalis* Allan, 1933, Rec. Aust. Mus., 18, No. 9, p. 445, pl. 56, fig. 4-5.

The above name was overlooked by the author when compiling the first list of Victorian Opisthobranchia; and in its stead *P. novaezealandiae* Cheeseman was used. From a quick glance at the figures and description of *P. maculatus* any species could be suggested to fit the name; but the type locality is Westernport Bay, Victoria. The description of *P. novaezealandiae* seemed to be closer to our species at the time, and this therefore was the name used.

Since that time, however, a further number of specimens have come to hand, including a large specimen from Flinders, Westernport Bay. These have led to a reconsideration of species, and the results are such that *P. maculatus* (Q. and G.) should be used, and that *P. novaezealandiae* Cheeseman is synonymous.

The other species of *Pleurobranchaea*, *P. dorsalis* Allan, recorded from New South Wales and Tasmania, is, from its description, undoubtedly the same species, although perhaps a warmer sea ecological variant. It has been observed that certain species become paler in colour as they move into colder waters, and, therefore, if this is so, then *P. dorsalis* can also be accepted as a synonym of *P. maculatus*.

Finally, if the above synonymy is accepted, then it would appear that *P. maculatus* is an inhabitant of the temperate and cool-temperate regions of the Pacific. It has been recorded as common in Japan and occurring in China by Baba (1949), and has been collected in New Zealand, New South Wales, Victoria and Tasmania.

Victorian localities for the species include Lorne, Apollo Bay, Queenscliff, Sorrento, and Flinders, Westernport Bay.

PALIO PARVULA sp. nov.

(Pl. I, fig. 2-3, text fig. 2)

Very small limaciform animal, 9 mm. in length. Velar processes 2; large and digitiform. Pallial ridge consisting of a row of (8-9) broadly-spaced points along either side. Branchial plumes 5 in number; bipinnate, non-retractile. Anterior edge of branchial cavity with 7 low papillae placed evenly in a semi-circle. Rhinophores large, non-retractile, perfoliate. Oral tentacles indistinct, lobiform. Foot very narrow; sole pink, edged with orange; anterior corners rounded. Genital orifice large. Body-colour maroon, maculated with white. Velar processes dorsally orange, ventrally white. Pallial ridge points yellow; papillae anterior to branchiae bright red. Branchiae and rhinophores dark red. Radula formula 11 x 3.2.0.2.3. First lateral small, hamate, calcarate, spur large and half way down the inner side. Second lateral, hamate. Remaining 3 laterals simple, scale-like.

*Locality*: Torquay (1 spec., Dec., 1956; 2 spec., Oct.-Dec., 1957).

*Station*: Uncommon, under stones at low tide.

Remarks: This species is placed in the genus *Palio* Gray in preference to *Polycera* Cuvier as the nature of the velar processes and pallial ridge warrant it. *Palio* is generally accepted as a synonym of *Polycera* (or as a subgenus, if this name is used at all). The radula is typical of *Polycera*, and, while this alone can place a species in a genus, the external features in the author's opinion place the species in the genus *Palio*.

This species has as yet no congeners occurring in Australian waters.



Text fig. 2.

*Palio parvula* sp. nov.

A—half row of radula, a—first lateral, b—second lateral, c—outer laterals, B—rhinophore.

### *PALIO*LLA gen. nov.

Animal polyceridiform; body limaciform, very soft, pallial ridge not prominent, consisting of a row of small pointed papillae. Branchial plumes few in number, bipinnate and sub-retractile. Branchial cavity crescentic, anterior lip strong. Rhinophores large, perfoliate, retractile. Radula degenerate; all that remains is a group of calcareous rods in the form of a long, slender tube. These are supported on either side by a further series of minute rods.

Type species: *Polycera cooki* Angas.

This genus is proposed for the reception of a single species *P. cooki* (Angas); the most unusual odontophore features being different from any other known genus. The number, form and shape of the rods make it impossible to formulate a normal radula. The supplementary rods on either side of the large ones may be the remains of a normal radula, or again may be the first signs of a radula with the subsequent decrease of the central tubiform portion.

*Gymnodoris* Stimpson, which has numerous branchiae, is very similar to *Paliolla*, a genus which has but a few. *Gymnodoris* has a divided hermaphrodite gland, which is formed into globules, but whether it is the same in *Paliolla* remains to be seen. It is worth noting that the outer lateral teeth of the radula in *Gymnodoris* spp. are long and slender, but on a broad base, so much so that there is actually a great similarity between them and the central rods in *Paliolla*.

Possibly *Paliolla* is an archaic genus in the phanerobranchiate Nudi-branchia, as is *Gymnodoris*.

### *PALIO*LLA COOKI (Angas)

(Pl. I, fig. 4; text fig. 3)

*Polycera cooki* Angas, 1864, *J. Conchylol.*, 12, p. 58, pl. 5.

Body small, limaciform, very soft; up to 17 mm. in length and 4 mm. in width. Pallial ridge comprising many small, soft papillae. Dorsum separated from sides by pallial ridge, but continuous into tail. Rhinophores large, clavate, perfoliate, with 8 very steep laminae. Branchiae 5 in

number, bipinnate, sub-retractile, arranged in a broad crescent. Branchial cavity with a strong anterior lip. Foot not as wide as body, square and grooved anteriorly. No oral tentacles, mouth a large pore in a depression just above the foot. Body-colour orange or yellow; entirely covered with minute strawberry-red dots; foot whitish. Pallial ridge red or white. Internally below the branchiae there is a large, bright pink mass.

Radula peculiar; tubiform, comprising 9 long, slender rods in three series. The first or anterior series—length about two-thirds of total—comprises 5 equal-length rods, the anterior ends rounded and curved outwards, providing a funnel-like inlet. The second series of two rods is placed medianly; length 1.3 mm.; anterior ends sharply pointed; posterior ends



Text fig. 3.

*Paliolla cooki* (Angas).

Complete radula.

a—central tubiform portion, b—minute supporting rods.

rounded. The third series, again of two rods, is placed at the posterior end of the tube, length same as second series; anterior ends sharply pointed; posterior ends broken and bent to one side. Total length of rods in largest specimen 2.5 mm. Laterally, at half length of the second series, are two wings, each of which has 7 minute rods parallel to each other, but at an angle of slightly less than 45 degrees to the main tube.

*Localities:* Breaclea (1 spec., Nov., 1955); Torquay (2 spec., Dec., 1955, 2 spec., Mar., 1957, 2 spec., Dec., 1957); Airey's Inlet (1 spec., April, 1957).

*Station:* Not uncommon, usually in pairs, under stones near low tide level.

*Remarks:* As can be seen from the remarkable buccal features, this species is indeed hard to place in any existing genus. Previously it has been placed in *Polycera* by Angas and in *Palio* by Bergh, although personally the author would have preferred to place the species in *Gymnodoris*. But the degenerate radula, while reminiscent of *Gymnodoris*, is sufficiently different as to allow the erection of a new genus.

KALOPLOCAMUS RAMOSUS (Cantraine)

*Doris ramosus* Cantraine, 1835, *Acad. Roy. Sci., Bruxelles*, Bull. No. 2, p. 383.

Length 22 mm.; body limaciform; head slightly broader than body; margin of head with 8 dendritic processes. Dorso-lateral processes dendritic, in 5 pairs. Branchiae 5 in number, bipinnate and non-retractile. Rhinophores clavate; clavus small and perfoliate; stalks very long and slender. Oral tentacles lobiform. Foot narrow, thickened anteriorly. "Radula formula at most 43 x 37.3.0.3.37. The first three laterals large, hamate; the rest scale-like" (Baba, 1949). Body-colour pale orange speckled with white, with a single row of white dots along either side. Clavus of rhinophores red, stalks clear; velar and dorso-lateral processes colourless. Branchiae either colourless or bright red, the latter with or without white tips.

*Locality*: Torquay (1 spec., Oct., 1957, 2 spec., Jan., 1958).

*Station*: Rare, under stones near low tide.

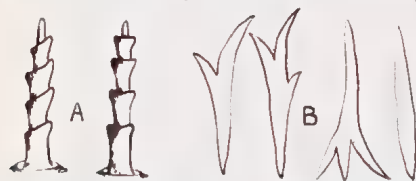
*Remarks*: This species is recorded from the Mediterranean (type locality) and Japan. The above specimens agreed exactly with the figure given by Baba (1949), *Opisthobranchia of Sagami Bay* (Tokio) pl. 13, fig. 47.

*Triopa yatesi* Angas, from Port Jackson, undoubtedly belongs to this genus, and may even be the same as the above species. Certain differences between the two species are easily seen, and until *T. yatesi* is again collected and studied its validity must remain in doubt.

LAMELLIDORIS MAUGEANSIS *sp. nov.*

(Pl. 2, fig. 8-9 text fig. 4)

Length 8 mm., breadth 5 mm. Doridiform body, dorsal surface covered with a multitude of blunt-pointed papillae; height upwards of 2 mm.; retracted they appear as low, stud-like pustules. Integument of mantle densely spiculose; spiculae of many forms, some simple, some divided and some calcarate. Rhinophores claviform, with 4 large oblique laminae, retractile. Margins of rhinophore openings smooth. Branchiae 4 in number, simply pinnate, arranged in a shallow horseshoe crescent in front of the anal papilla. Branchial cavity transversely oval. Head broad, crescent shaped, with the extremities formed into stout digitiform processes. Mouth large. Foot broad anteriorly and tapers sharply to a blunt tail—does not extend beyond mantle margin. Body-colour orange-yellow, foot clear. Ventrally the mantle is transparent, and the silver and gold spiculae are very visible when viewed with a low-power lens. Rhinophores and branchiae faintly yellow, with openings rimmed with gold. The liver forms a very dark mass on the posterior left side. Radula too small



Text fig. 4.

*Lamellidoris maugeansis sp. nov.*

A—Rhinophore viewed from side and front. B—mantle spiculae, 4 forms.

for examination by the author, but there was seen to be 22 rows of teeth. Labial armature not noticed, although a small amount of oral cuticle was present.

*Localities:* Torquay (8 spec., Oct.-Nov., 1957, type locality); Breamlea (1 spec., Jan., 1958).

*Station:* Not uncommon, under stones at low tide. Usually in crevices or holes where a certain amount of mud accumulates.

*Remarks:* Very hard to find, as the body-colour usually blends with the muddy background; often in colonies of numerous individuals.

This species has no congeners in Australian waters, but a closely allied genus, *Acanthodoris*, occurs in Tasmania.

#### GONIODORIS MERACULUS *sp. nov.*

(Pl. 2, fig. 10-11)

Body stoutly limaciform, angular; length 17 mm. Dorsal surface smooth, half as broad as foot anteriorly, and a little broader near the branchiae. Pallial margin a very thin, narrow, rim-like flange, minutely crenulate and roughened, continuous all round except behind the branchiae. Rhinophores linear-clavate, perfoliate, with 12 or more very fine laminae; situated extremely close to the anterior pallial ridge. Branchiae large, bipinnate, 7 in number, all joined at the base and arising not from a cavity, but from the dorsal surface surrounding the large anus. Foot broad, flat, minutely flecked with white, square in front, with a wide notch below the head. Tail ridged from behind branchiae to tip. Head large, produced well forward and sideways; orals linear; a low ridge from pallial rim to edge of head; eyes visible as black dots either side of the head ridge. Mouth a vertical slit; jaws occasionally visible as two brown plates inside the mouth. Radula not examined. Genital orifice a large elliptic pore behind the line of the rhinophores. Body-colour pale greenish-yellow, heavily maculated with white. Region around branchiae pink, internally black. Rhinophores with brown stalks and yellow clavi; branchiae clear or pale pink; pallial rim yellowish. Underside of head around mouth dark brown.

*Locality:* Torquay (1 spec., Dec., 1957).

*Station:* Most rare, nested in a shallow depression on a species of slimy encrusting sponge under a stone at low tide.

*Remarks:* When first observed alive, this species appeared to be a yellowish sea-anemone, around which some sponge growth had encroached. The author poked the "anemone" to see if it would retract. It did not retract, so it was scooped up with a knife and placed in a jar of water, where it immediately came to life. The specimen remained alive for several days before being placed in spirits. It is interesting to note that, when first picked up, the specimen had its foot edges curled up to the pallial rim, and the underside was an exact caste of the depression in the sponge.

This species is very similar to all species of the genus *Goniodoris* Forbes and Goodson (1839), but in being smooth-skinned it is easily differentiated. Although the genus *Goniodoris* is known to occur in New Zealand, this is the first record from Australia.

#### HALLAXA INDECORA (Bergh)

*Halla indecora* Bergh, 1905, *Siboga-Expd.*, Monogr. 50, p. 116, pl. 15, fig. 3-6.



Small, length up to 11 mm. Dorsal surface smooth, although velvet-like in appearance when alive. Rhinopore-clavus bulbous, perfoliate, with 5 or 6 laminae, retractile. Branchiae 10 in number, simply pinnate, retractile and in a complete circle surrounding the anus. Foot narrow, very deeply sinuated anteriorly, the extended corners possibly acting as orals. No projecting head and no oral tentacles. The mouth has two darker patches above it in the form of an inverted V—these, perhaps, are degenerate orals. Body-colour pale yellow, rhinophores and branchiae similar in colour. Radula not examined; Baba (1949) states, after examining two specimens, "18 x 6.1.0.1.6 and 20 x 7.8.1.0.1.7-8. First lateral large and broad, bicuspidate at tip. All succeeding laterals narrow and knife-shaped, with a series of 9-11 denticles on the edge." O'Donoghue (1929) describes a radula with teeth corresponding to those stated by Baba above, but says that there are 33 rows of teeth, 7.1.0.1.7.

*Locality:* Torquay (1 spec., Jan., 1958).

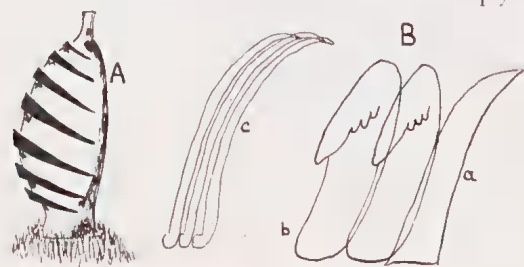
*Station:* Rare, crawling on a specimen of the echinoderm *Halopneustes inflatus*, although it is quite possible that it had just crawled on to this from surrounding seaweed.

*Remarks:* A most remarkable small doridaform animal easily indentified by the lack of orals and a sinuate foot. The pale colour is apparently unusual, normal colouring being in the grey or red-purple groups. This species is recorded from the East Indies, the Red Sea from Suez and Aden, Japan, and now Australia.

#### ROSTANGA HARTLEYI *sp. nov.*

(Pl. 2, fig. 12-13; text fig. 5)

Up to 40 mm. in length and 20 mm. in breadth. Body-shape roughly rectangular, with rounded corners, somewhat narrower at about half its length. Mantle covered everywhere with closely-set villous papillae as in *R. arbutus* (Angas); but here the papillae are much finer, slender, longer and closer together. Rhinophores clavate, perfoliate, with 7 or 8 large laminae, retractile; rhinophore-sheaths large. Branchiae 10 in number, bipinnate, set in a complete circle around the anus; retractile within a large circular cavity. Branchial-cavity with a very large sheath, margin finely crenulate. Head small, not prominent; orals very long and slender. Foot broad, flat, thickened and nearly square anteriorly; upper lamina deeply notched. Body-colour pale pink or buff, with 3 to 5 large brown patches on either side of the median line; each patch encircled by a faint ring of white papillae. Rhinophores and branchiae white tipped. Radula formula 22 x 18—22.0.18—22. First lateral simply hamate without denticles;



Text fig. 5.

*Rostanga hartleyi sp. nov.*  
 A—detail of rhinophore.  
 B—half row of radula;  
 a—inner laterals,  
 b—median laterals,  
 c—outer laterals.

succeeding 12 laterals hamate, with a series of 3 denticles on the inner edge of each; outermost laterals slender, very closely set.

*Localities:* Sutherlands Bay, Phillip Island (3 spec., Jan., 1957); Flinders (2 spec., Dec., 1955); Torquay (2 spec., Sept., 1957); Breamlea (1 spec., Jan., 1958, type locality).

*Station:* Not common, under stones and crawling on seaweed in rock pools at low tide.

*Remarks:* Very similar to *R. arbutus* (Angas), but the points of difference are consistent. These differences can best be seen by the following key to the two species:—

*R. arbutus* (Angas).

1. Small body, flat in section, 30 mm. or less in length, breadth more than half length.
2. Rhinophores with numerous small laminae.
3. Head with short digitiform orals.
4. Radula 60 x 50-60.0.50-60; inner lateral finely denticulate, succeeding laterals simply hamate.

*R. hartleyi mihi.*

1. Large body, convex, over 30 mm. in length, breadth equals half length.
2. Rhinophores with 7 or 8 large laminae.
3. Head with very long orals.
4. Radula 22 x 18-22.0.18-22; inner lateral simply hamate, succeeding laterals denticulate.

It would appear as though *R. hartleyi* is the Flindersian representative of this genus. The author has in his possession a single specimen of this species collected at Coobowie, South Australia, by Mrs. T. W. Hartley of Melbourne, after whom the species is named.

#### *ALLOIODORIS NIVOSUS* sp. nov.

(Pl. 2, fig. 14; text fig. 6)

= *A. marmorata* Burn, 1957, *J. Malac. Soc. Aust.*, No. 1, p. 19, non Bergli, 1904.

Body-shape broadly elliptic, length up to 30 mm. and width up to 22 mm., rather flat. Dorsal surface entirely covered with minute spiculate papillae making it coarse to the touch and matt in appearance. Mantle much broader than foot, margin subcrenulate. Rhinophores clavate, finely perfoliate, retractile within low-sheathed cavities which have crenulate margins. Branchiae 7 in number, tripinnate, retractile within a broadly-oval transverse aperture; surrounding anus. Foot narrow, anteriorly notched and grooved. Head large, rounded; orals digitiform. Genital orifice large, appears as a longitudinal slit, situated a little behind the line of the rhinophores. Body-colour pure white, sometimes margined with brown; a number of dark brown spots on the sole, underside of mantle and sides of foot. Rhinophores brown; branchiae white, tipped with brown. Radula formula 37-40 x 18-19.0.18-19. First lateral quite large, a very strongly-curved spine on a short base. Median laterals larger, spines gradually decreasing in size towards the outside. Outer laterals falciform, not denticulate, and much smaller than inner laterals. Labial armature weak, but there is a large, strong oral cuticle.

*Localities:* Portarlinton (many spec., 1954-1956); Sutherlands Bay, Phillip Island (6 spec., Jan., 1957); Shoreham (1 spec., Nov., 1957; type locality).

*Station:* Common under stones between tides, usually in muddy positions.

*Remarks:* The body-colour in some specimens is light grey, dorsally darker; mantle with numerous dark brown ring-like circles, in the centre of which is a pure white spot.



Text fig. 6.

*Alloiodoris nivosus* sp. nov.

Half row of radula; a—first lateral,  
b—typical median lateral,  
c—outer lateral.

This species has previously been recorded under the name of the Tasmanian species, *A. marmorata* Bergh (1904). Externally some specimens resemble *A. marmorata* as figured by Basedow and Hedley (1905—pl. 8, fig. 1-2). *A. marmorata* Bergh is a much larger species than *A. nivosus mihi*, and has quite a different radula, both in the teeth and the formula, the former being 34-35 x 40-42.0.40-42, with the outer teeth denticulate; the latter is 37-40 x 18-19.0.18-19 without any denticulate teeth.

Apparently *A. marmorata* Bergh is the Tasmanian or true Maugean representative of the genus, and *A. nivosus mihi* the Victorian form. But now arises the question: What is the correct name of the South Australian species recorded as *A. marmorata* Bergh by Basedow and Hedley? O'Donoghue (1924), when describing his species, *A. hedleyi* from the Abrolhos Islands, claimed his species to be identical with South Australian specimens, probably basing his claim on Basedow and Hedley's statement that their specimens did not have denticulate outer teeth. But *A. nivosus* is similar to *A. hedleyi* in that it has no denticulate teeth, and therefore South Australian specimens have equal claim to either name. Also because the similarity between living Victorian specimens and the figures of those from South Australia is so much so that the author would prefer to use the name *A. nivosus* for the specimens from the Eastern Flindersian Region until, that is, specimens from there can be examined.

#### *PLATYDORIS GALBANUS* sp. nov.

(Pl. 1, fig. 6-7; text fig. 7)

Body small, length 40 mm., breadth 24 mm. Body-shape broadly elliptic, rather flat. Mantle leathery to the touch, minutely granular all over; expanded well beyond the foot. Branchiae very large and bushy; quadripinnate 5 in number, with the anus protruding between the rear pair. Branchial cavity margin consists of 5 broad, indistinct valves. Margins of rhinophore-sheaths crenulate. Rhinophores small, clavate; clavus apparently narrower than stalk, perfoliate, with 10 steeply-angled laminae. Oral tentacles digitiform, head rounded. Foot narrow, grooved anteriorly, not extending beyond posterior margin of mantle. Genital orifice large,

at the right-anterior third; male portion protruding from the anterior side; nephroproct on upper anterior side of genital orifice. Body-colour yellow, of a very bright hue; mantle with a few medium-sized white spots. Rhinophores and branchiae chocolate-brown. Radula formula  $18 \times 30.0.30$ . All lateral teeth large, simply hamate.



Text fig. 7.

*Platydoris galbanus* sp. nov.  
Single typical lateral tooth of radula.

*Locality:* Sutherlands Bay, Phillip Island (2 spec., Jan., 1957).

*Station:* Rare, under a block of "blue clay" in a muddy position at low tide.

*Remarks:* A beautiful and distinctive species with no congeners in southern Australian waters. A number of species occur in northern tropical waters, and, while all are somewhat similar to the above, none agree exactly with the above description or colour.

#### JANOLUS HYALINA (Alder and Hancock)

*Antiopa hyalina* Alder and Hancock, 1854, *Mon. Brit. Nudi. Moll.*, Pt. 6, family 3, pl. 44, fig. 8-12.

Body small, stoutly acolidiform; up to 17 mm. in length. Entire mantle margin set with 4 rows of closely-set branchial papillae. Branchial papillae roughly ensiform, rather flat, nodulose all round on the upper half; largest medianly in the inner row. Rhinophores with a large nautiloid-like crest between the bases; each is conical-clavate, perfoliate, non-retractile; eyes visible just behind the rhinophores. Anus protrudes posteriorly on the mid-dorsal line of the dorsum, well inside the branchial papillae. Genital orifice large, consisting of a circular pore on the posterior side. From the outer leading edge of this pore arises a short stalk, which has a bulbous distal end. Head small; orals digitiform, at right angles to the mid-dorsal line; mouth a longitudinal slit. Foot broad, flat, slightly hollow on the anterior edge, extending well beyond posterior margin of dorsum into a pointed tail which has a bare crest. Body-colour fawn; dorsum orange spotted. Branchial papillae fawn; ramifications dark brown. Radula not examined.

*Locality:* Torquay (2 spec., Jan., 1958).

*Station:* Rare, under rocks in mid-tide pools.

*Remarks:* Eliot (1910) states that the radula formula is  $15 \times 11-13.1$ . 11-13, but his figures of the species differs in some ways to those given by Alder and Hancock in their original description. My specimens agree extremely well with the original description and figures, and therefore I have used the above name in preference to creating a new species.

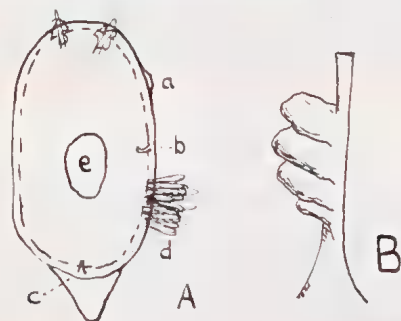
Unfortunately, the correct systematic position of this and the next species are unknown to the author from lack of literature on the subject. Therefore, while the sub-order is known, the super-family and family are left blank until further information is gained.

This and the next species might easily be confused when collected together, but this species, *J. hyalina*, is darker in colouring and has a most distinctive crest between the rhinophores, which the next species lacks. The type locality of this species is Cheshire, England.

*PROCTONOTUS? AFFINIS* sp. nov.

(Pl. 2, fig. 15; text fig. 8)

Body small, broadly acolidiform, up to 15 mm. in length. Branchial papillae comprising 4 rows of closely-set, claviform, non-caducous papillae set all round the dorsal margin, including across the tail. Rhinophores claviform, median-part of rear edge set with 4 rows of closely-set papillae, as in *Madrella* Alder and Hancock, non-retractile. Median part of dorsum smooth; a large pericardium is centrally situated a little to the right posterior side. Genital orifice large, on the right anterior side, forward of the pericardium. Anus situated among the branchial papillae on the posterior edge of the dorsum, elevated slightly. Nephroproct(?) on right side, next to pericardium, arises from among inner rows of branchial papillae and faces forward. Foot pale pink, long, rounded and thickened in front and pointed behind, extending posteriorly beyond papillae; crest of tail bare. Head small, no noticeable veil as in other species, but the head-corners are produced slightly into short digitiform tentacles. Mouth typical of the genus. Body-colour reddish-fawn; median part of dorsum orange or red; pericardium vermilion, brighter than dorsum, outlined with yellow; rhinophore-sheaths joined by a yellow patch, which itself is joined to the yellow around the pericardium by a short but broad yellow line. Head pale pink, tail transparent; rhinophores clear, speckled with greenish-yellow spots.



Text fig. 8.

*Proctonotus? affinis* sp. nov.

- A—dorsal view, a—genital orifice,
- b—nephroproct(?), c—anus,
- d—papillae, e—pericardium.
- B—detail of rhinophore.

Branchial papillae fawn, externally speckled with minute red spots, so that they appear reddish, internally dark brown. Radula not examined.

Locality: Torquay (1 spec., Oct., 1956; 6 spec., Oct.-Dec., 1957).

Station: Rather common, under stones at and below mid-tide.

Remarks: At first this species was thought to belong to the genus *Madrella* Alder and Hancock (1864) because the rhinophores are of the same type as that genus. But the positions of the anus and nephroproct, and the shape of the branchial papillae, would not allow for the reception of the species there. The genus *Proctonotus* Alder and Hancock (1846) was originally stated to have the rhinophores linear, the papillae tuberculate, and the papillae not continuous over the posterior part of the dorsum. In

these points this species does not agree, and thus it is only tentatively referred to *Proctonotus* at present.

Unfortunately, as stated for the previous species, the author has been unable to ascertain the systematic position of the species. The dorsal anus is somewhat reminiscent of the doridiform nudibranchs, but otherwise seems quite unrelated to any of the 3 sub-orders, Arminacea, Dendronotacea, and Eolidacea.

*DOTO OSTENTUS* sp. nov.

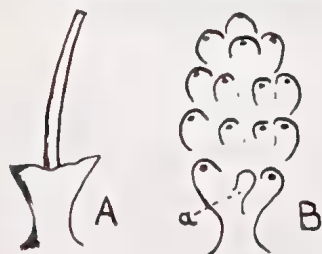
(Pl. 1, fig. 5; text fig. 9)

Body somewhat aeolidiform; small, slender, length 8 mm., breadth without cerata 1 mm. Head a little expanded into a semi-circular head-veil. Rhinophores simple; a long, slender, curved clavus arising from a large, cup-like sheath, the anterior of which is broadly crenulate. Dorso-lateral margins, with 7 pairs of large, non-caducous cerata, each pair being the same size except the last, which is much smaller. Cerata clavate, each ceras with 3-4 circlets of papillose nodules, 6-7 nodules in each circlet, nodules rounded. Branchial fold is in the form of a single horn-like projection on the inner side of each ceras. The anus, which protrudes considerably, is situated dorso-laterally between the first and second cerata on the right side. Body-colour white, everywhere except rhinophores and foot spotted with minute black dots; cerata pink, a black spot on the apex of each nodule and also the apex of each ceras.

*Locality:* Torquay (2 spec., Dec., 1957; type locality), Flinders (4 spec., May, 1958).

*Station:* Not rare, under stones in pools at mid-tide.

*Remarks:* This is the first record of the family Dotonidae from Australia. Rather similar to the type of the genus *Doto maculata* Montagu, but differs in a number of small features about the cerata and colouring.



Text fig. 9.

*Doto ostentus* sp. nov.

A—detail of rhinophore.

B—detail of single ceras, inner aspect,  
a—branchial fold.

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#### EXPLANATION OF PLATES.

##### Plate 6.

1. *Elysia furvacauda* sp. nov.—dorso-lateral view.
2. *Palio parvula* sp. nov.—dorsal view.
3. *Palio parvula* sp. nov.—ventral view.
4. *Paliolla cooki* (Angas)—dorso-lateral view.
5. *Doto ostentus* sp. nov.—lateral view.
6. *Platydoris galbanus* sp. nov.—dorsal view.
7. *Platydoris galbanus* sp. nov.—head.

##### Plate 7.

8. *Lamellidoris maugeansis* sp. nov.—dorsal view.
9. *Lamellidoris maugeansis* sp. nov.—ventral view.
10. *Goniodoris meraculus* sp. nov.—dorsal view.
11. *Goniodoris meraculus* sp. nov.—ventral view.
12. *Rostanga hartleyi* sp. nov.—dorsal view.
13. *Rostanga hartleyi* sp. nov.—head.
14. *Alloiodoris nivosus* sp. nov.—dorsal view.
15. *Proctonotus? affinis* sp. nov.—dorsal view.

#### ADDENDA

The missing names from the systematic list at the beginning of this article should be as follows:—

- Sub-order - - - - Arminacea.  
 Super-family - - - Pachygnatha.  
 Family - - - - - **JANOLIDAE.**

\**Janolus hyalina* (Alder and Hancock).

\**Proctonotus? affinis* sp. nov.

The author can see no reason for the use of the family name Antiopellidae as Odhner (1939) has used. *Antiopella* was proposed by Hoyle (1902) to replace *Antiopa* Alder and Hancock (1848), which was already in use. *Antiopa* was proposed to replace *Janus* Verany (1844) which itself was pre-occupied. In 1884 Bergh proposed *Janolus* for a species with huge jaws, a feature which probably is only a specific difference between *Antiopa* spp. and *Janolus* spp. Therefore, the author has used the family Janolidae in preference to Antiopellidae.

—Robert Burn.

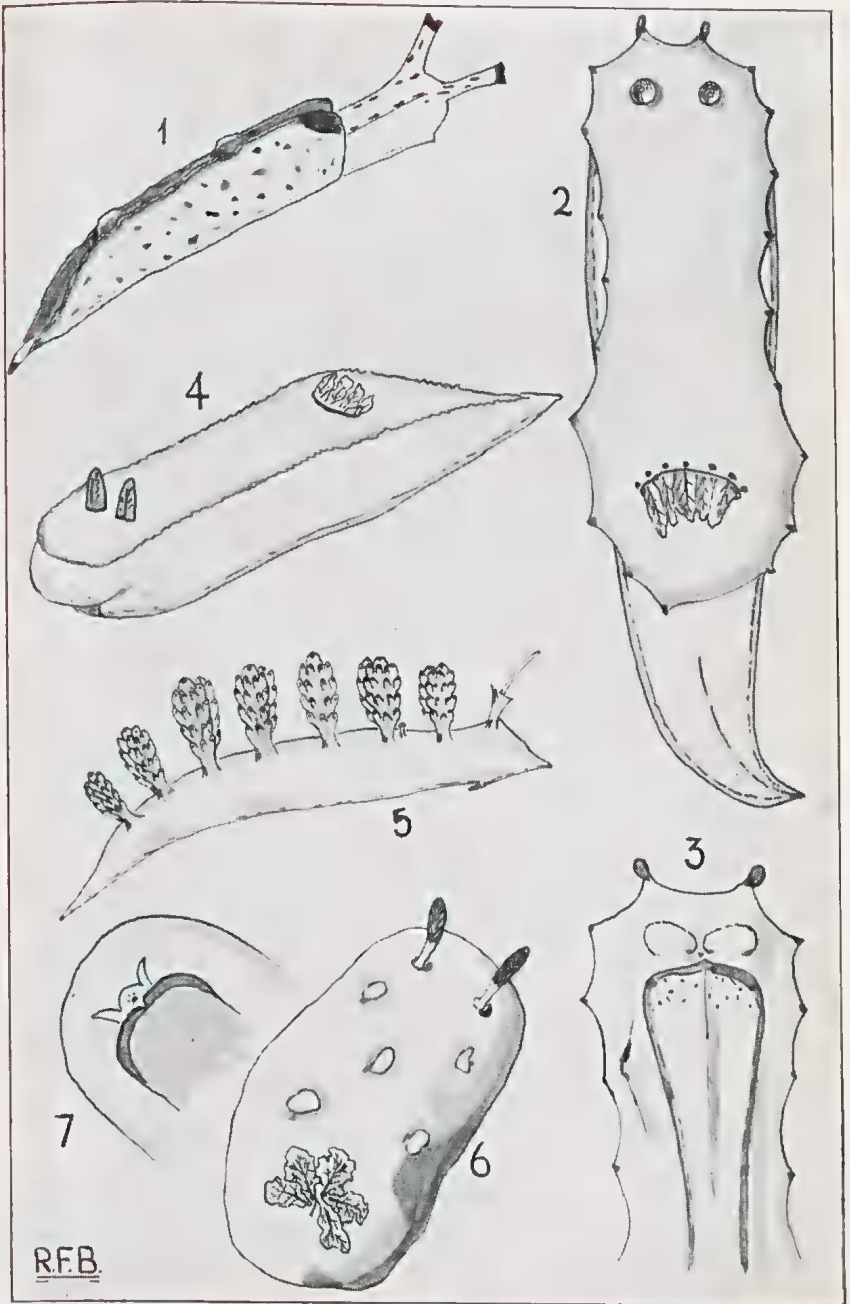


Plate 6.



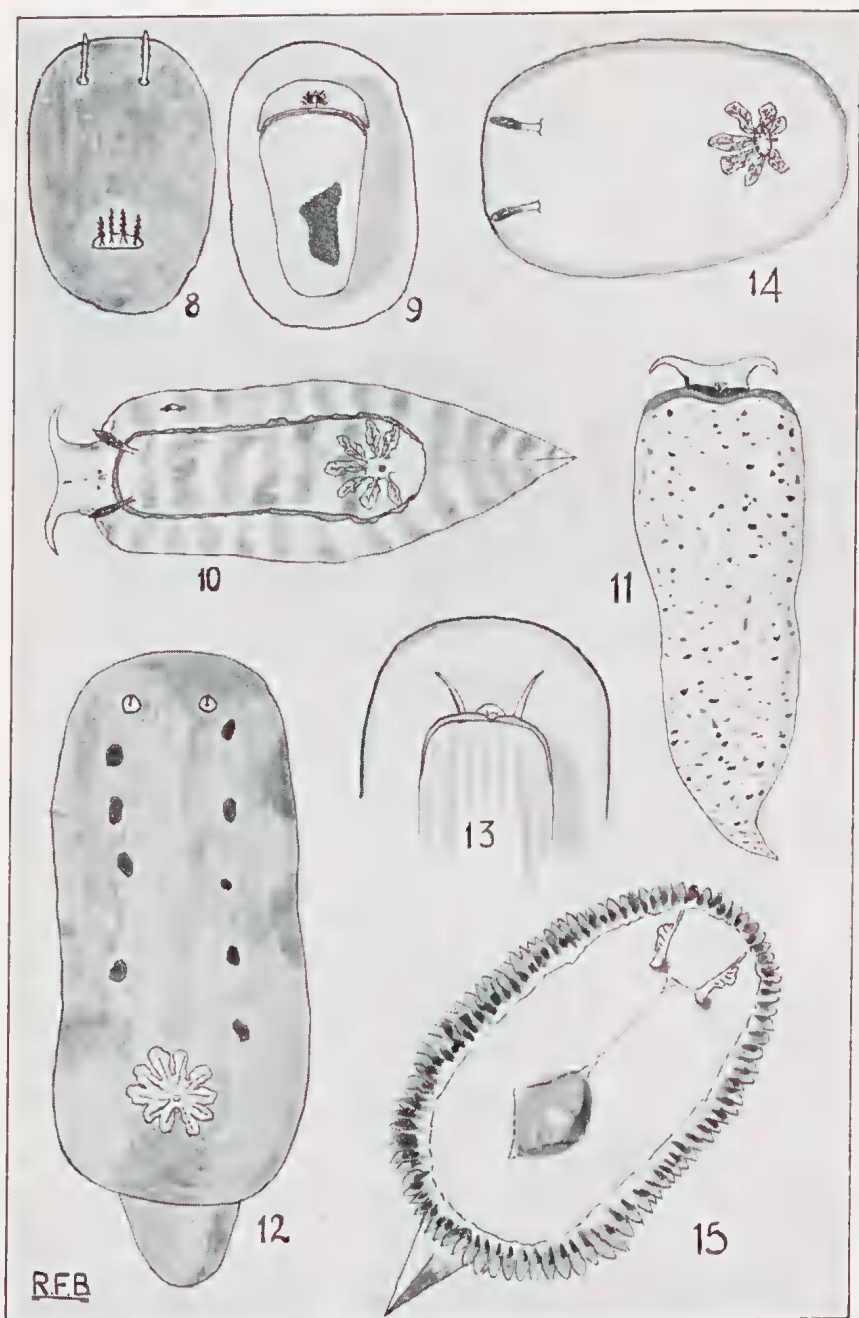


Plate 7.